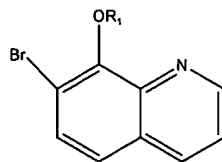


WHAT IS CLAIMED IS:

- Claim 1. A method of determining the presence and amount of beryllium or a beryllium compound in a sample, comprising:
- 5 admixing a sample suspected of containing beryllium or a beryllium compound with a dissolution solution for sufficient time whereby beryllium or a beryllium compound within said sample is dissolved;
- 10 mixing a portion from said admixture with a buffered solution containing a fluorescent indicator capable of binding beryllium or a beryllium compound to the fluorescent indicator; and,
- determining the presence or amount of beryllium or a beryllium compound within said sample by measuring fluorescence from said fluorescent indicator.
- Claim 2. The method of Claim 1, wherein the dissolution solution is an ammonium bifluoride solution.
- Claim 3. The method of Claim 1, wherein the fluorescent indicator forms a six-member ring with beryllium or a beryllium compound.
- Claim 4. The method of Claim 1, wherein the fluorescent indicator is 10-hydroxybenzo[*h*]quinoline-7-sulfonate.
- Claim 5. The method of Claim 7, wherein the buffered solution includes a metal chelating agent.
- Claim 6. The method of Claim 5, wherein the metal chelating agent is EDTA or a salt of EDTA.

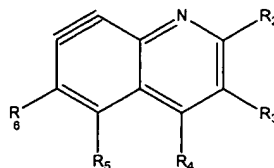
- Claim 7. The method of Claim 4, wherein the buffered solution includes lysine.
- Claim 8. The method of Claim 5, wherein the buffered solution comprises lysine.
- Claim 9. A composition of matter comprising an aqueous solution including 10-hydroxybenzo[*h*]quinoline-7-sulfonate and a buffer with a pK_a between 7 and 13.5.
- Claim 10. The composition of matter of claim 9 further comprising a metal chelating agent.
- Claim 11. The composition of matter of claim 10 wherein the metal chelating agent is EDTA or a salt of EDTA.
- Claim 12. The composition of matter of claim 9 wherein said buffer is an amine buffer.
- Claim 13. The composition of matter of claim 12 wherein said amine buffer is lysine.
- Claim 14. The composition of matter of claim 10 wherein said buffer is an amine buffer.
- Claim 15. The composition of matter of claim 14 wherein said amine buffer is lysine.

Claim 16. A composition of matter comprising the chemical formula
 $C_9H_5NBrOR_1$ with the structure



wherein R₁ is selected from the group consisting of tosylate
(CH₃C₆H₄) and triflate (CF₃SO₂).

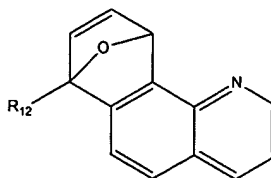
Claim 17. A composition of matter comprising the structure



wherein R₂, R₃, R₄, R₅ and R₆ are each independently selected
from the group consisting of hydrogen, an alkyl group having from
1-5 carbons, an aryl group, an alkyl-substituted aryl group having
from 1-10 carbons, nitro, an alkoxy group having from 1-10
carbons, a substituted aryl group having nitro substitution, a
substituted aryl group having carboxylic acid substitution, a
substituted aryl group having phosphoric acid substitution, and a
substituted aryl group having azo substitution.

Claim 18. The composition of matter of claim 17 wherein R₂, R₃, R₄,
R₅ and R₆ are each hydrogen.

Claim 19. A composition of matter comprising the chemical formula
 $C_{13}H_8NOR_{12}$ with the structure



wherein R_{12} is selected from the group consisting of hydrogen,
 $SiMe_3$, an alkyl group having from 1-5 carbons, an aryl, an alkyl-
substituted aryl group having from 1-10 carbons, $N(R_{13})_2$, $O(R_{14})$,
 $C(OR_{15})_2$, $S(R_{16})$, and $Sn(R_{17})_3$ where R_{13} , R_{14} , R_{15} , R_{16} and R_{17} are
each independently selected from the group consisting of an alkyl
group having from 1-5 carbons, an aryl group, and an alkyl-
substituted aryl group having from 1-10 carbons.